

- [c1] A hydrodynamically balanced rudder that is fully retractable.
- [c2] The hydrodynamically balanced rudder of claim 1 wherein a leading edge of the rudder is positioned forward of an axis point about which the rudder is operated to steer when the rudder is positioned in water.
- [c3] The hydrodynamically balanced rudder of claim 1 wherein a hydrodynamic center of the rudder is substantially aligned with an axis point about which the rudder is operated to steer when the rudder is positioned in water.
- [c4] The hydrodynamically balanced rudder of claim 1 wherein the rudder has a deployed position in which the rudder is in the water and a stowed position in which the rudder is out of the water and the rudder pivots about an axial pivot near one end of the rudder to operate between the stowed position and the deployed position.
- [c5] The hydrodynamically balanced rudder of claim 4 wherein the rudder pivots at least 180 degrees between the stowed position and the deployed position.

- [c6] The hydrodynamically balanced rudder of claim 4 wherein the rudder pivots at least 270 degrees between the stowed position and the deployed position.
- [c7] The hydrodynamically balanced rudder of claim 1 wherein the rudder rests in substantial alignment with a boat deck when in the stowed position.
- [c8] The hydrodynamically balanced rudder of claim 1 further comprising:
an axel pivot point near one end of the rudder; and
a frictional engagement surface formed at a position away from the axel pivot point, wherein the frictional engagement surface is configured to frictionally engage a complementary engagement surface when the rudder is in a deployed position in water.
- [c9] A rudder assembly comprising the hydrodynamically balanced rudder of claim 1 in combination with a housing, wherein the housing comprises:
an axel pivot pivotally coupling to one end of the rudder;
a mounting receptacle for pivotally coupling to a rudder mount of a boat; and
a snap mechanism operable to provide a frictional engagement between the rudder and the rudder assembly when the rudder is in a deployed position in water.

- [c10] A water craft comprising the hydrodynamically balanced rudder of claim 1.
- [c11] A rudder assembly for use with a water craft such comprising:
a rudder blade having a pivot end including a pulley wheel, wherein a pivot axel point is defined at the center of the pulley wheel;
a housing having an axel aligned with the pivot point and pivotally coupled to the rudder blade at the pivot point;
a mounting receptacle for pivotally coupling to a rudder mount of a water craft; and
a snap mechanism operable to provide a frictional engagement between the rudder and the housing at a point separate from the pivot end when the rudder blade is in a deployed position in water.
- [c12] The rudder assembly of claim 11 wherein the rudder blade is held in a hydrodynamically balanced position when deployed and can be fully retracted into the water craft when in a stowed position.
- [c13] The rudder assembly of claim 11 wherein a leading edge of the rudder is positioned forward of an axis point defined by the mounting receptacle about which the rudder is operated to steer when the rudder is positioned in wa-

ter.

[c14] The rudder assembly of claim 11 further comprising:
a control line coupled to the rudder blade and positioned around the pulley wheel such that the rudder blade is movable about the pivot axel point by pulling on either a first free end of the control line or a second free end of the control line.

[c15] A water craft comprising:
a hull having a stern;
a rudder mount at the stern of the hull;
a rudder assembly pivotally coupled to the rudder mount, the rudder assembly comprising:
a rudder blade having a pivot end including a pulley wheel, wherein a pivot axel point is defined at the center of the pulley wheel;
a housing having an axel aligned with the pivot point and pivotally coupled to the rudder blade at the pivot point; and
a mounting receptacle for pivotally coupling to a rudder mount of a water craft.

[c16] The water craft of claim 15 further comprising a snap mechanism operable to provide a frictional engagement between the rudder and the housing at a point separate from the pivot end when the rudder blade is in a de-

ployed position in water.

- [c17] The water craft of claim 14 further comprising:
a control line coupled to the rudder blade and positioned around the pulley wheel, wherein the control line has a first free end and a second free end extending into the hull such that the rudder blade is movable about the pivot axel point by pulling on either a first free end of the control line or a second free end of the control line.
- [c18] The water craft of claim 15 wherein the rudder blade is held in a hydrodynamically balanced position when deployed and can be fully retracted into the water craft when in a stowed position.
- [c19] The water craft of claim 15 wherein the watercraft is a kayak.
- [c20] The water craft of claim 15 wherein the watercraft is a sailboat and further comprises:
a mast coupled to the hull; and
a sail mounted to the mast.